NANSENIA IBERICA, A NEW SPECIES OF MICROSTOMATIDAE (PISCES, SALMONIFORMES)

by

Jesús MATALLANAS (1)

ABSTRACT. – A new species of ***Nansenia*, *N. iberica*** n. sp., with four branchiostegal rays, a predorsal length between 48,0 - 49,0 % of standard length, 46 vertebrae and with the proximal part of the adipose fin pigmented, is described.

RÉSUMÉ.– Description d'une nouvelle espèce de ***Nansenia*, *N. iberica*** n. sp., avec quatre rayons branchiostèges, une longueur prédorsale comprise entre 48,0 - 49,0 % de la longueur standard, 46 vertèbres et avec la partie proximale de la nageoire adipeuse pigmentée.

RESUMEN.– Se describe una nueva especie de ***Nansenia*, *N. iberica*** n. sp., que tiene cuatro radios branquióstegos, una longitud predorsal comprendida entre 48,0 - 49,0 % de la longitud standard, 46 vértebras y pigmentada la parte proximal de la aleta adiposa.

Key-words : *Nansenia iberica*, new species, Microstomatidae, MED Western Mediterranean.

The study of the fishes belonging to the genus *Nansenia* has been made easier by the recent revision by Kawaguchi & Butler (1984). The need of such a revision has already been recommended by Cohen (1958) who, in that moment, could not undertake it due to the lack of material. Although Kawaguchi & Butler (1984) recognise 13 species, 7 of them being new, they admit that there is certainly a considerable number of them to be described. Besides, they described adult specimens of *N. atlantica,* whose original description, although provisionally based on juvenile specimens, was made by Blache & Rossignol (1962).

Nansenia is included in the family Microstomatidae following Ahlstrom *et al.* (1984) and Kawaguchi & Butler (1984).

During several hauls made by the trawler « Peret », off Blanes, three specimens (one of them damaged) of *Nansenia* were captured. Seeing that their characters were different from those of the species known so far, a new one is therefore described.

Nansenia iberica n. sp.

Holotype : Department of Zoology, Autonomous University of Barcelona, n° 1983.12.20 ; female, 206 mm SL; Blanes (NE Spain), 500-600 m, 20/XII/1983.

---

(1) Department of Zoology. Autonomous University of Barcelona. Bellaterra, Barcelona, Spain.

Cybium, 1986, 10(2) : 193-198.

Paratype : n° 1985.6.14; female, 250 mm SL; Blanes, 500-600 m, 14/VI/1985.
Other specimens examined : 1 specimen, very damaged, of ***N. iberica*** caught with the holotype. Two uncatologed mediterranean specimens of ***N. oblita*** (Muséum d'Histoire naturelle de Nice and Laboratorio Centrale di Hidrobiologia, Rome); 1 spec. of ***N. crassa*** (Natural History Museum of Los Angeles County, n° 35594); 2 spec. of ***N. ardesiaca*** (Zoologiske Museum, University of Copenhagen, n° P19624-25); 1 spec. of ***N. atlantica*** (Institut für Seefischerei, Hamburg, n° 685/68) ; 1 spec. of ***N. tenera*** (Instituto de Investigaciones Pesqueras, Barcelona, n° 754/1981) and 5 spec. of ***N. problematica*** (Instituto de Investigaciones Pesqueras, Barcelona, n° 707-711/1981).

The method used in this article follows Kawaguchi & Butler (1984).

Description

Distinctive characters. – *Nansenia iberica* differs from the other species of *Nansenia* in the following combination of characters : 4 branchiostegal rays; 46 vertebrae; predorsal length 48.0 - 49.0 % of standard length; proximal part of the adipose fin densely pigmented.

Description of the holotype – (Fig. 1 ; in parentheses the proportions of the paratype). Body elongate and laterally compressed ; its depth, being nearly uniform up to dorsal fin, decreases then to the caudal peduncle, 6.6 (7.4) in standard length. Body width 1.6 (1.4) in its depth and 10.8 (11.1) in its length. Scales, due to their little adherence, are missing totally except for the terminal part of the lateral line (Fig. 2B); caudal peduncle long, its depth 1.7 (1.9) in its length.

Head length 4.8 (5.2) in standard length. Snout approximately half of eye diameter. This diameter, equal to the interorbital space and to the caudal peduncle depth, is 2.6 (2.4) in head length. Horizontal diameter of eye slightly longer than the vertical one. Pupil oval. Lower jaw, slightly protruding, with about 130 vertical teeth, compressed and contiguous. Thirty vomerian teeth and nine palatine teeth not contiguous and curved inwards (all these data are taken from damaged specimen mentioned above; in the other two it is quite difficult to observe them because

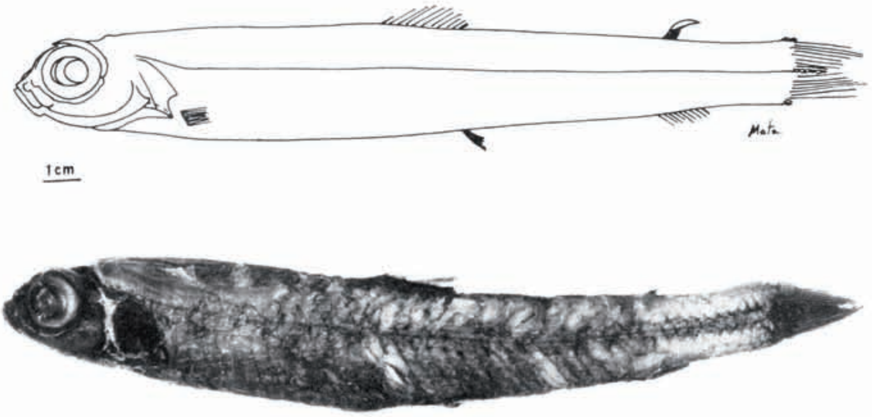

Fig. 1. – ***Nansenia iberica*** n. sp., holotype, female, 206 mm SL.

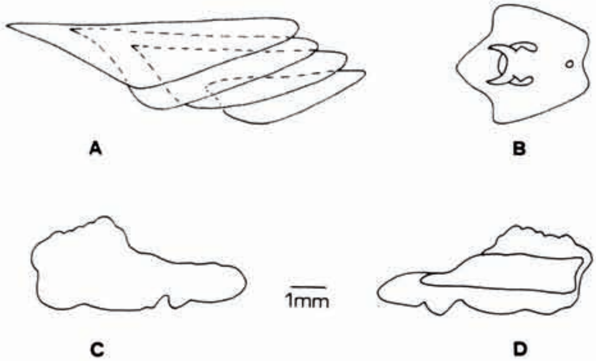

Fig. 2. – Branchiostegal rays (A), lateral line scale (B), outer (C) and inner (D) surface of the sagitta of *Nansenia iberica* n. sp.

their mouth are closely shut). The four branchiostegal rays are inserted obliqually (Fig. 2A).

The dorsal fin begins just in advance of half length of the body; the origin of the pelvic fins is placed just behind a vertical line from the posterior end of the dorsal base. Pectoral fins in low position : upper end well below midpoint between lateral line and ventral margin of the body; lower end equally distant to ventral margin and to upper end of pectoral fin base.

The body colour, after fixation in 10 % formalin, is light violaceous, being darker in the anterior part of the body and in the ventral profile, from the gular region to anus. The nape with a dark violet circular spot that spreads to the lateral line, its diameter half of the head length. In the paratype, apart from the violet spot described above, there is another similar one just behind. The proximal part of the adipose fin as well as the dorsal, anal, ventral and caudal fins are black. The snout, mouth cavity and subopercular membrane are also black ; the rest of the head is grey.

The stomach is similar to the one of *Bathylagus glacialis* (*B. compsus,* according to Cohen, 1964) figured by Beebe (1933). Its first half is black and quite musculous, whereas the second, contiguous to the first and forwardly directed, is grey, thinner and has glandular acini, which are visible by transparency. The gut is rectilineal and light coloured except for its black terminal part, as the peritoneum. The gut presents a well developed spiral valve which begins at the level of the abdominal fins. The air bladder occupies a major part of the dorsal half of the body cavity and opens into the gut just in front of the beginning of the spiral valve. The pyloric caecae are light coloured. The lamina-shaped ovaries, reaching up to the anterior part of the body cavity, contain unripe oocytes, all of equal size.

The sagitta of the damaged specimen (Fig. 2C & D) is slender, very elongated, not very deep. It presents a very prominant rostrum but no antirostrum. The sulcus, very deep, has no collum; this is the reason why the ostium and the cauda are indifferentiated. If based on the shape of the margins of sulcus as well as on the terminology of Schwarzhans (1980), this sagitta is arqueosulcoide and ostial by the opening of sulcus. So far, no sagitta of any *Nansenia* species seems to have been described.

Counts and measurements of the three specimens of *N. iberica* studied are given in Tables I and II.

Table I. – Measurements (in mm) and counts of the three specimens of *Nansenia iberica* n. sp. examined.

Specimens	Holotype	Paratype	Damaged specimen
Standard length (SL)	206	250	222
Predorsal length	99	121	109
Preventral length	120	143	–
Preanal length	172	208	–
Preadipose length	174	206	–
Prepectoral length	46	52,5	–
Head length (HL)	43	48	–
Eye diameter (ED)	16	19,5	–
Snout	7	10	–
Interorbital	15	19	–
Body depth (BD)	31	33,5	–
Body width (BW)	19	22,5	–
Caudal peduncle length (CPL)	30	38	–
Caudal peduncle depth (CPD)	17	20	–
Dorsal fin	11	11	11
Anal fin	9	8	9
Pectoral fin	11	11	11
Ventral fin	10	10	10
Branchiostegal rays	4	4	4
Gill-rakers	36	–	35
Vertebrae	46	–	–
Pyloric caecae	6	7	7
Lateral line scales	± 50	–	–

Table II. – Counts and measurements of *N. iberica* compared with the other species of *Nansenia.* Data on *N. ardesiaca, N. crassa, N. oblita* and *N. atlantica* from Kawaguchi & Butler (1984).

Species	Vertebrae	Predorsal L. (% of SL)	CPL/CPD	BD/BW	HL/ED	Adipose fin base
N. ardesiaca	46 - 48	45.7 - 48.5	1.7 - 2.3	1.2	2.3 - 2.5	unpigmented
N. crassa	43 - 46	49.0 - 60.0	1.7 - 2.2	2.0	3.3 - 4.0	unpigmented
N. oblita	42 - 45	55.0 - 56.1	1.1 - 1.2	1.3 - 1.6	3.0 - 3.4	unpigmented
N. atlantica	41 - 42	51.9 - 56.9	1.4 - 1.5	1.4 - 1.6	2.7 - 3.0	pigmented
N. iberica	46	48.0 - 49.0	1.7 - 1.9	1.4 - 1.6	2.4 - 2.6	pigmented

Distribution

N. iberica is known only from western Mediterranean. In the Clofnam area there had only been mentioned *N. groenlandica* and *N. oblita* (Cohen, 1973, 1984). According to the distribution given by (Cohen, 1973, 1984). According to the distribution given by Kawaguchi & Butler (1984) for the *Nansenia* species, two other must be added : *N. longicauda* and *N. tenera.*

Discussion

N. iberica can be easily separated from all other *Nansenia* species by its distinctive characters previously given.

For its counts and measurements, including the CPL/CPD ratio, *N. iberica* is closely related to *N. ardesiaca* and to *N. crassa.* It differs from both in having a densely pigmented proximal part of the adipose fin and a different body coloration. From *N. ardesiaca* it differs, furthermore, in the counts and position of the pectoral fin and in having a more compressed body (BD/BW ratio, 1.4 - 1.6 versus 1.2 in one specimen of *N. ardesiaca* examined). A greater eye diameter (2.4 - 2.6 in HL versus 3.3 - 4.0) and a less ratio BD/BW (1.4 - 1.6 versus 2.0 in one specimen of *N. crassa* examined) also distinguish *N. iberica* from *N. crassa.*

N. iberica differs clearly from the four species of the genus hitherto recorded in the Clofnam area. From *N. oblita,* the only *Nansenia* species recorded in the Mediterranean, and from the closely related species *N. atlantica* from the eastern tropical Atlantic, *N. iberica* differs in having a shorter predorsal length (48.0 - 49.0 % in standard length versus 55.0 - 56.1 in *N. oblita* and 51.9 - 56.9 in *N. atlantica),* a longer caudal peduncle (CPL/CPD ratio 1.7 - 1.9 versus 1.1 - 1.2 in *N. oblita* and 1.4 - 1.5 in *N. atlantica*). From *N. oblita* it differs also in having a larger eye diameter (2.4 - 2.6 in HL versus 3.0 - 3.4), the proximal part of the adipose fin pigmented and a different body coloration. Vertebrae counts (46 versus 41-42), a different form and mode of insertion of the branchiostegal rays also distinguish *N. iberica* from *N. atlantica.*

The above mentioned species of *Nansenia* can be also easily separated by some morphological characters as opercular apparatus, lateral line scales, crumenal organ, ... (Matallanas, 1986, in press).

The generic status of *Nansenia problematica* Lloris & Rucabado, 1985, is presently under study but it is not *Nansenia.*

Etymology. The specific name *iberica* has been given in reference to its region of occurrence.

Acknowledgments. – My thanks to the skipper and crew of the trawler « Peret », from Blanes, for providing the type specimens of *N. iberica.* I am also indebted to Dr. D. Lloris, Dr. J. Rucabado, Dr. I. Palomera and Mrs. C. Allué of the « Instituto de Investigaciones Pesqueras, Barcelona »; Dr. Ph. Ewald (MHN Nice); Dr. A. Mariani, of the « Laboratorio Centrale di Idrobiologia, Rome »; Dr. A. Post, Dr. Ch. Karrer (ZMH); Dr. J.G. Nielsen (ZMUC); Dr. J.A. Seigel (LACM); for the loan of specimens in their care; to Mr. J. Murguialday for the revision of the english version of the manuscript and to Mr. X. Folch for the radiography of the holotype.

REFERENCES

AHLSTROM E.H., MOSER H.G. & D.M. COHEN, 1984. – Argentinoidei : Development and Relationships in MOSER, H.G. & W.J. RICHARDS *et al.* Ontogeny and Systematics of Fishes. *Spec. Publ., 1, Amer. Soc. Ichthyol. Herpetol.*, 155-169.

BEEBE W., 1933. – Deep sea fishes of the Bermuda Oceanographic Expeditions, n^{o} 3 : Argentinidae. *Zoologica*, 16 (3) : 97-146.

BLACHE J. & M. ROSSIGNOL, 1962. – *Nansenia atlantica* nov. sp. (Teleostei, Clupeiformes, Opisthoproctoidei, Microstomidae). Poisson bathypélagique nouveau du Golfe de Guinée (diagnose provisoire). *Cah. O.R.S.T.O.M., sér. Océanogr.* (2) : 103-106.

COHEN D.M., 1958. – *Nansenia candida*, a new species of argentinid fish from the north Pacific, with notes on the other species of *Nansenia*, *Stanford Icht. Bull.*, 7 : 52-57.

– 1964. – Suborder Argentinoidea. *Mem. Sears Found. Mar. Res., New Haven* 1 (4) : 1-70.

– 1973. – Argentinidae (including Microstomatidae) *in* HUREAU J.C. & Th. MONOD. *Check-list of the fishes of the north-eastern Atlantic and of the Mediterranean.* Vol. I., Unesco, Paris, 152-154.

– 1984. – Argentinidae (including Microstomatidae) *in* WHITEHEAD, P.J. P., BAUCHOT M.L., HUREAU J.C., NIELSEN J. & E. TORTONESE. *Fishes of the north-eastern Atlantic and the Mediterranean.* Vol. I. Unesco, Paris, 386-391.

KAWAGUCHI K. & J.L. BUTLER, 1984. – Fishes of the genus *Nansenia* (Microstomatidae) with descriptions of seven new species. *Contributions in Science*, 352 : 1-22.

LLORIS D. & J. RUCABADO, 1985. – A new species of *Nansenia* (*N. problematica*) (Salmoniformes, Bathylagidae) from the Southeast Atlantic. *Copeia*, 1985 (1) : 141-145.

MATALLANAS J., 1986. – Descripción de algunas estructuras con interés taxonómico en *Nansenia* (Pisces, Microstomatidae). *Miscel. Zool.* (in press).

SCHWARZHANS W., 1980.– Die tertiäre Teleosteer-Fauna-Neuseelands, rekonstruiert anhand von Otolithen. *Berliner geowiss. Abb.* (A) 26 : 1-211.

Accepté pour publication le 5.03.86